

# MINTZ LEVIN

Russell H. Fox | 202 434 7483 | rfox@mintz.com

701 Pennsylvania Avenue, N.W.  
Washington, D.C. 20004  
202-434-7300  
202-434-7400 fax  
www.mintz.com

December 3, 2010

## VIA ELECTRONIC FILING

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

**Re: Ex Parte Notice**

**WT Docket No. 10-133**

**ET Docket No. 10-123**

**PS Docket No. 06-229**

Dear Ms. Dortch:

On December 3, 2010, Steve Sharkey of T-Mobile USA, Inc. ("T-Mobile") and the undersigned met with Douglas C. Sicker, the FCC's Chief Technologist regarding the above-captioned proceedings. T-Mobile's presentation is summarized in the attached slide deck, which was also provided to Mr. Sicker.

Pursuant to section 1.1206(b) of the Commission's rules, a copy of this letter and attachment are being filed electronically with the Office of the Secretary for inclusion in the above-referenced dockets and served electronically on the Commission participant in the meeting.

Please direct any questions regarding this filing to the undersigned.

Sincerely,

*/s/ Russell H. Fox*

Russell H. Fox

Attachment

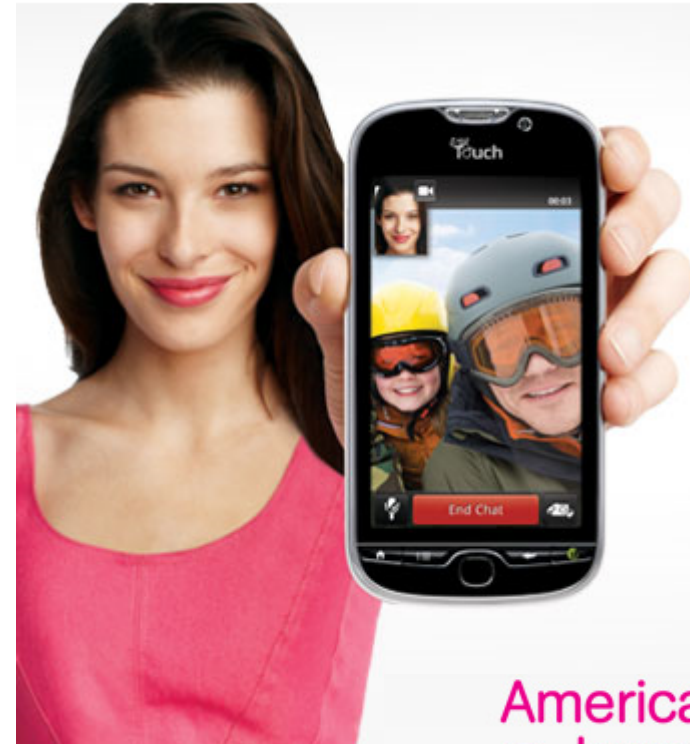
cc: (with attachment)  
Douglas C. Sicker

**Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.**

BOSTON | WASHINGTON | NEW YORK | STAMFORD | LOS ANGELES | PALO ALTO | SAN DIEGO | LONDON

# T-Mobile's 4G Network and the Importance of Low Band Spectrum

stick  
together®



America's  
largest  
**4G**  
network™

---

**T** · · Mobile®

# Introduction to T-Mobile's 4G Network

- T-Mobile's Fourth Generation Network
- What others have to say...
- 4G enabled devices
- 4G coverage map
- T-Mobile's network build out story

# T-Mobile's Fourth Generation Network

## Speed:

- Theoretical peak throughput speeds of 21Mbps – up to three times the speeds of standard 3G with much lower latency than 3G networks
- Speeds that are on par with today's WiMAX technology and are expected to be roughly equivalent to LTE technology

## Breadth:

- Largest 4G network in the U.S. today – reaching over 80 major metropolitan areas across the U.S.
- On pace to reach 200 million people in 100 major metropolitan areas by end of 2010

## Choice of Devices & Experience:

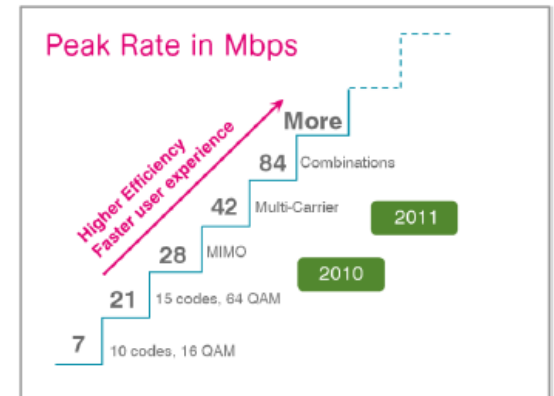
- Variety of 4G devices including the T-Mobile® G2™, myTouch® 4G, and Dell™ Inspiron™ Mini 10 4G, as well as webConnect® Rocket™ 2.0 Laptop Stick

## Customer Value:

- Unlike some of our competitors, we're not charging customers more for 4G and HSPA+ technology

## HSPA+ Evolution:

- Next year, T-Mobile is planning to upgrade the network to support even faster 4G speeds (theoretical peak speeds of 42 Mbps); expected to double the average and peak data rates



# What others have to say...

□ “Consumers do not understand the technical alphabet soup of technologies involved in 4G, but for our purposes we define WiMAX, LTE and HSPA+ as 4G technologies. HSPA+ is evolving a far more ambitious and long-term road map than was originally envisioned. T-Mobile is using an upgrade to HSPA+ to deliver faster 4G speeds today and is quickly bringing a number of HSPA+ devices to market that greatly enhance the mobile data experience for its customers.” – **Chris Nicoll, Yankee Group**

□ “Yankee Group reports that Verizon's unofficial 4G LTE results land around 8.5 Mbps, and the company promises a range of 5 to 12 Mbps. If T-Mobile is smart, it will talk in numbers, since its HSPA+ network can already meet — or beat — these real-world results.” – **MSNBC.com**

□ “T-Mobile's HSPA+ *does* deliver faster performance, no doubt. I have a myTouch 4G smartphone on hand and just this week it reached download speeds in excess of 5.3Mbps. That's fast. The quickest download on my Verizon Wireless MiFi: 1.8Mbps.” – **InformationWeek**

□ “While Sprint and AT&T are quick to challenge T-Mobile's 4G assertion, T-Mobile has just as much right to call its network 4G as any of the other wireless providers.” – **PC World**

□ “That means every 4G network currently being deployed in the US is an impostor — so T-Mobile has just as much a right to promote its HSPA+ network as 4G as its competitors. In a recent data speed showdown, T-Mobile's network actually ranked higher than Sprint's 4G.” – **VentureBeat**

# 4G Enabled Devices



**T-Mobile® myTouch® 4G**



**T-Mobile® G2™ with Google™**



**T-Mobile® Rocket™ 2.0  
4G Laptop Stick**



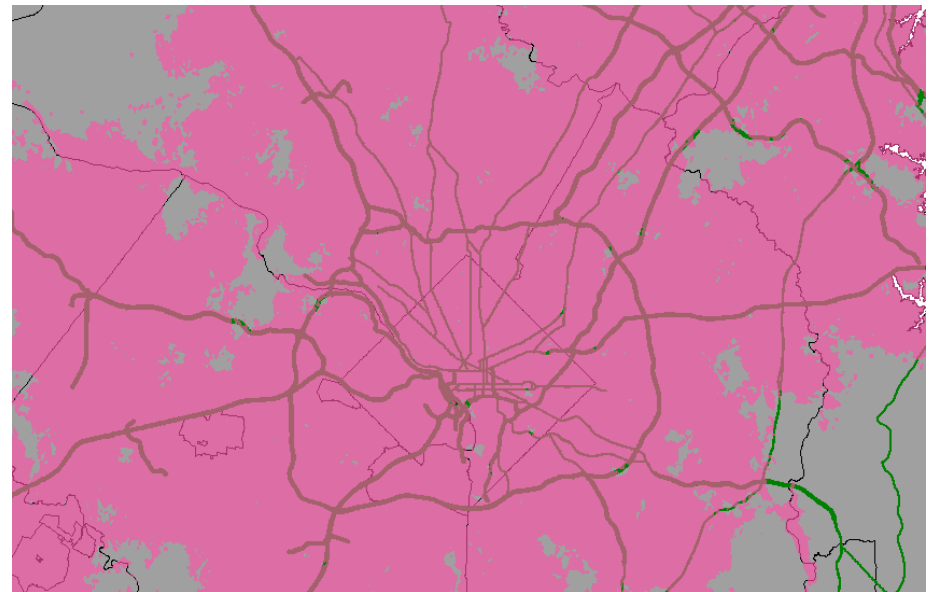
**Dell™ Inspiron™ Mini 10 4G**

# 4G markets and DC area coverage Map



**As of Nov. 23, 2010**

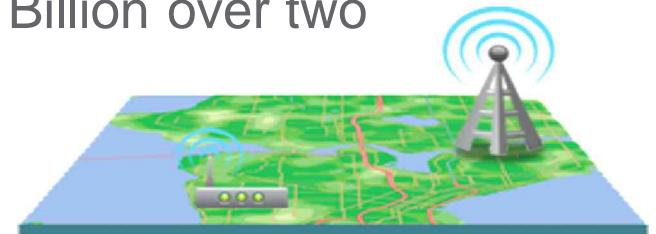
-Markets identified in blue are coming soon



-Current 4G coverage area for the Washington DC area

# Our network build out story

- T-Mobile rolled out 3G using UMTS and HSPA technology:
  - Built 3G network to cover 212M people in approximately 24 months
  - Coordinated network deployment with pre-existing commercial and federal spectrum users
- Built 4G HSPA+ network overlay onto the 3G network footprint:
  - Significant engineering investments using existing 3G sites
  - Combined network investment of over \$12 Billion over two years



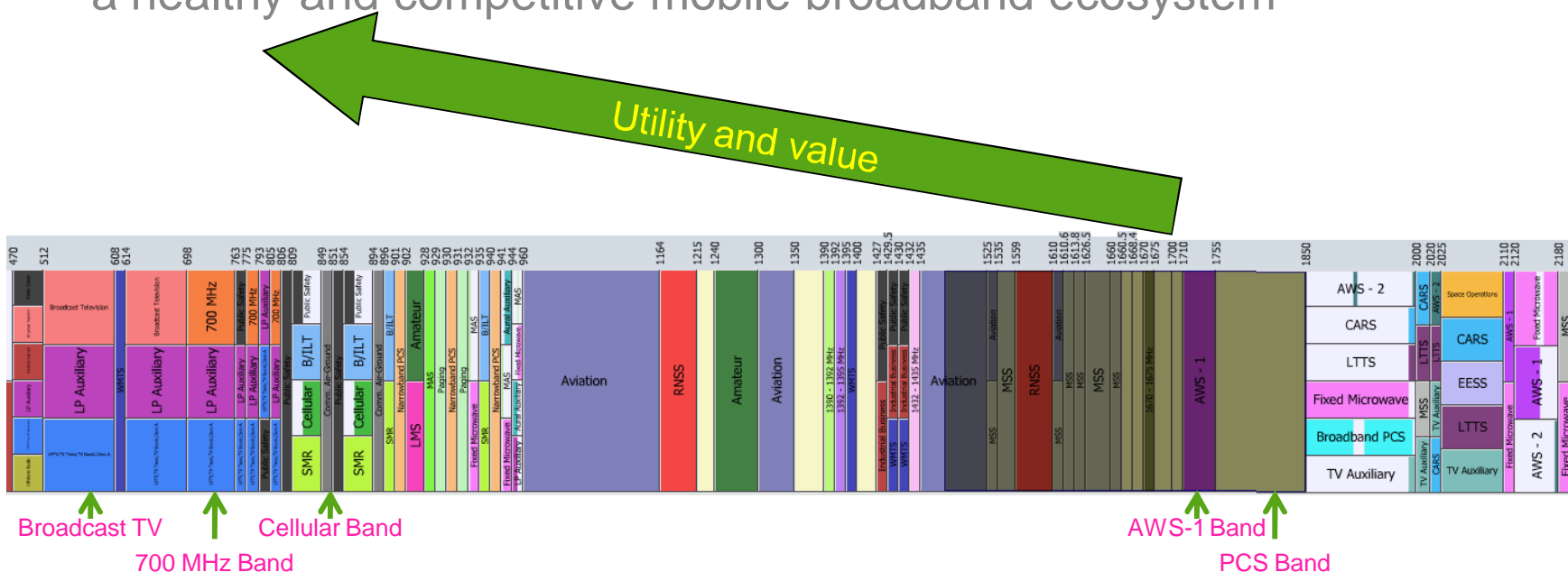


# Getting more Spectrum for Mobile Broadband

- More spectrum—*the right spectrum*—is needed
- Advantages of low band spectrum
- Mix of spectrum facilitates broadband capacity and coverage
- Low band spectrum holdings
- Valuations of low band spectrum
- Recommendations

# More spectrum – *the right spectrum* – is needed

- T-Mobile applauds the efforts of the Commission, the Administration, and Congress to identify more spectrum for mobile broadband
  - 300 MHz within five years and 500 MHz within ten years necessary to meet increasing demand
- However, making the right spectrum available is critical to ensuring a healthy and competitive mobile broadband ecosystem



# Advantages of low band spectrum

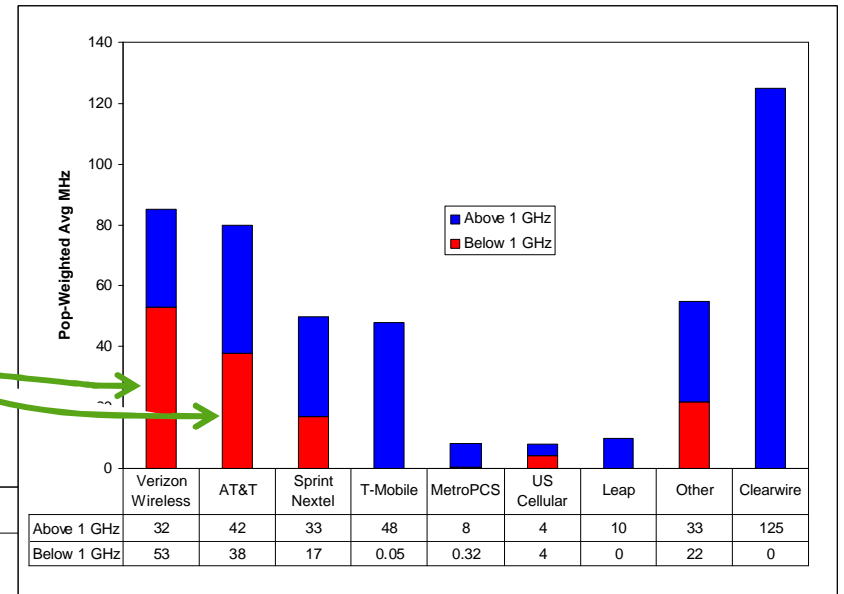
- Low band spectrum (below 1 GHz) provides several advantages:
  - Longer distances for the same transmission power level
  - Better penetration for buildings (of particular importance for emergency responders and E-911 services)
  - Enables network deployment in rural areas
- The FCC and other regulators have recognized the inherent value of low band spectrum for mobile broadband deployment:
  - In the *14th Mobile Wireless Competition Report* the Commission noted that, **“lower frequency bands – such as the 700 MHz and Cellular bands – possess more favorable intrinsic spectrum propagation characteristics than spectrum in higher bands.”** ¶ 269
  - Likewise, DOJ has noted the difference in valuation of lower band spectrum: **“the propagation characteristics of [1900 MHz PCS] spectrum are such that signals extend to a significantly smaller area than do 800 MHz cellular signals.”** *United States of America v. AT&T Inc. and Dobson Communications Corporation*, Competitive Impact Statement (filed Oct. 30, 2007).

## Mix of spectrum facilitates broadband capacity and coverage

- A mixture of low and upper band spectrum is important to building competitive high speed mobile broadband networks:
  - Low band spectrum allows for greater breadth of coverage, particularly in rural environments when topography and/or utility services limit the ability to add “fill in” sites
  - Upper band spectrum works well for urban environments where network capacity depth is often a bigger issue than coverage
- But don't just take our word, read what others have to say about the benefits of low band spectrum:
  - **“I will tell you in my career in wireless I have never had the opportunity to have this kind of spectrum and be able to use it.”** Lowell McAdam, Verizon Communications - EVP, President and CEO Verizon Wireless, at Barclays Capital Communications, Media and Technology Conference, May 26, 2010 (referring to Verizon's 700 MHz band spectrum holdings)
  - **“Both low and high spectrum bands are beneficial for mobility. Lower frequency bands (below 1 GHz) have propagation benefits and higher frequency band (1-3 GHz) can achieve greater improvements in capacity.”** AT&T *ex parte* filing at 29, WT Docket 06-150, *et al.*, Oct. 25, 2010.

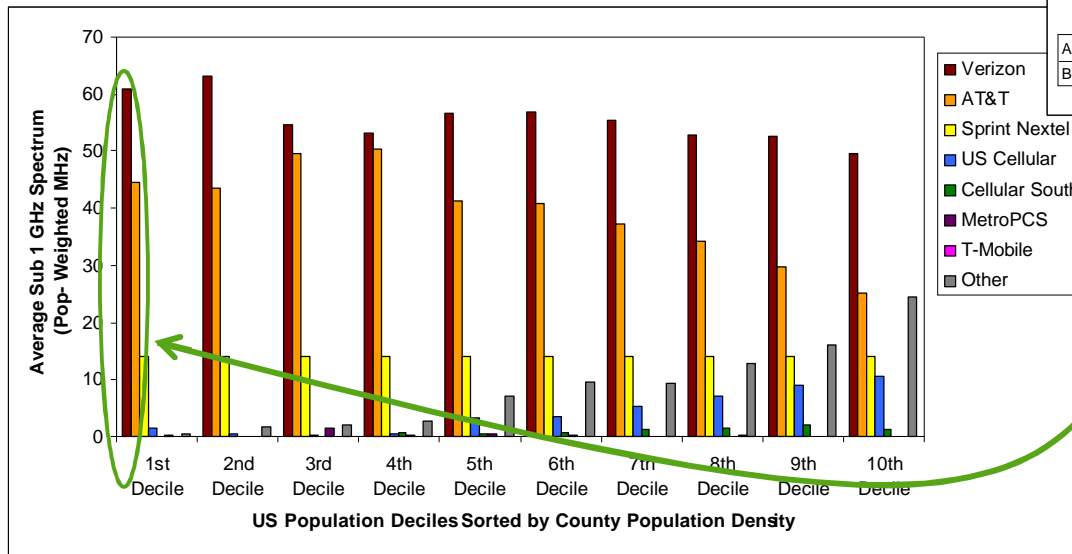
# Low Band Spectrum Holdings

- As pointed out in the *14th Mobile Wireless Competition Report*, much of the low band spectrum is held by only two carriers



Source: *14th Mobile Wireless Competition Report* Chart 41.

- Further, these two carriers also dominate the Pop-Weighted MHz metric



Source: *14th Mobile Wireless Competition Report* Chart 42.

# Valuations of low band spectrum

The competitive value of low band spectrum can be quantified:

- The results of Auction 73 demonstrate the premium value placed on 700 MHz spectrum in all markets. The provisionally winning bids for the A, B, C, and E Block licenses raised nearly \$19 billion. By contrast, the auction of 50 percent more spectrum in the higher frequency AWS-1 band raised \$5 billion less than Auction 73
- On a MHz-pop basis, the average price for the 700 MHz spectrum was \$1.28 per MHz-pop. This unit price was more than twice the average price of \$0.54 per MHz-pop for AWS spectrum auctioned in 2006

# Recommendations

- Work with NITA and Congress in making more spectrum available for mobile broadband
  - Encourage NTIA to examine federal spectrum below 3 GHz for mobile broadband
- The upcoming 15<sup>th</sup> Wireless Mobile Competition Report should continue to recognize the utility and value of low band (below 1 GHz) spectrum to mobile broadband competition
  - Low band spectrum inputs need to be evaluated as distinct from upper band spectrum inputs
- Make more low band spectrum available
  - **Immediate action:** Start the necessary rulemaking proceedings to auction the 700 MHz D Block that is essential to making low band spectrum available for competitive carriers and constructing public safety broadband networks
  - **Long term action:** Incentive auctions for spectrum currently used by broadcast TV could be a good source of low band spectrum; until then there is a shortage of low band spectrum